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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/823,239

04/12/2004

Te-Sun Wu

JCLA12729

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23900

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05/01/2008

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EXAMINER

JAMAL, ALEXANDER

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

05/01/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                   |  |
|------------------------------|--------------------------------------|-----------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/823,239 | <b>Applicant(s)</b><br>WU, TE-SUN |  |
|                              | <b>Examiner</b><br>ALEXANDER JAMAL   | <b>Art Unit</b><br>2614           |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Based upon the submitted amendment, the examiner notes that claims 1 and 14 have been amended.
2. The examiner withdraws the 112 rejection to claims 1-7.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-6,8,9,12-17 rejected under 35 U.S.C. 102(a) as being anticipated by Lygas (6532292).

As per **claim 1**, Lygas discloses a system that may be used with a phone system (Col 1 lines 10-25). The system comprises directional speaker elements 120,130 in Fig. 2 and a receiver (microphone) which audio signals are sent, but the microphone does not receive the directional speaker output (echo is reduced) (Col1 lines 45-50). The system is used in a phone, where the means to transfer signals received by the microphone to a communications network are provided to perform the known telephone function of communication.

As per **claims 8,14** they are rejected as per the claim 1 rejection. The ultrasonic modulating system functions to polarize a remote audio signal such that it propagates directionally through air.

As per **claims 2,9,15**, the directional speaker elements create a signal field of predetermined shape (which includes a predetermined direction and range). The field is created using an ultrasonic carrier wave. (Col 2 lines 1-20).

As per **claims 3,16,17**, the ultrasonic modulated signal is demodulated through air back into an audible signal (Col 3 lines 30-60) within the predetermined field.

As per **claim 4**, the receiver microphone is not within the range (it is only in the ear canal). There is a stated advantage that this setup will reduce echo (Col 1 lines 55-60).

As per **claim 5**, the device creates a field inside the canal of a listener, which would be a wedge with a predetermined direction and a characteristic direction (based on the shape) creating an angle of less than about 30 degrees (Col 3 lines 20-30).

As per **claims 6,12,13**, they are rejected as per the claim 1 rejection.

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3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 7,10,11** rejected under 35 U.S.C. 103(a) as being unpatentable over Lygas (6532292) as applied to claims 1-6,8,9, above, and further in view of Li (US20040124739).

As per **claims 7,10**, Lygas discloses the ultrasonic directional speaker used for echo reduction, but does not specify the specifics of the audio signal modulating portion or any pre-compensation for the audio signal.

Li teaches an ultrasonic modulator for a directional speaker. The modulator comprises precompensator 200 (fig. 3) and ultrasonic modulator 204, AM unit 202, and power amplifier 206. It would have been obvious to one skilled in the art at the time of this application to implement a known ultrasonic modulating system to provide the details (such as modulating type) left out by Lygas.

As per **claim 11**, it is rejected as per the claim 1 rejection.

### ***Response to Arguments***

1. Applicant's arguments have been fully considered but they are not persuasive.

As per applicant's argument (page 7) that Lygas discloses an audio signal that self modulates in air, the examiner notes that Lygas discloses a specific modulation of the audio signal (via a controller) in Figs. 1,2 that may be used in a telephone system (Col 1 lines 10-50).

As per applicant's argument (page 8) that Lygas does not teach a control unit interfacing bidirectional audio with a communications network, the examiner notes that Lygas discloses a phone system which inherently comprises a controller for the purpose of implementing known bidirectional communication (telephones !) over a communications network. The whole purpose of Lygas' system is to solve the known problem of echo in telephone systems.

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

/Alexander Jamal/

Primary Examiner, Art Unit 2614

Examiner Alexander Jamal

April 30, 2008